

### **REMARKS**

Claims 9, 13-17 and 20-22 are currently pending in this application. This Amendment amends Claim 13. In view of the foregoing amendments and the following remarks, Applicant respectfully requests reconsideration and withdrawal of the rejections and that pending Claims 9, 13-17 and 20-22 are in condition for allowance. No new matter has been added.

#### **35 U.S.C. §112 Rejection**

The Examiner has rejected Claims 13-17 and 20-22 under 35 U.S.C. §112, second paragraph, for indefiniteness. Basically, the Examiner asserts that Claim 13, which requires that the exposed portions of the photodefinable polymer composition are removed (i.e, the composition is positive-working), be limited only to the positive tone photoinitiator. In response, Claim 13 has been limited to a positive tone photoinitiator as the Examiner suggests. In view of the above, withdrawal of the rejection and allowance of amended Claim 13 and Claims 14-17 and 20-22, which depend therefrom, are respectfully requested.

#### **35 U.S.C. §102 Rejection**

*Otani et al.*

The Examiner has rejected Claim 9 under 35 U.S.C. §102(b) for anticipation by Japanese Patent No. 2001-226419 to Otani et al. (hereinafter “the Otani patent”). Applicant respectfully traverses.

For a rejection under 35 USC §102 to be properly made and sustained, the art cited in that rejection must disclose each and every element of the claim(s) called out in the rejection.

MPEP §2131:

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

Specifically, the Examiner asserts that such patent teaches (see Abstract) a photocurable resin composition comprising a polyester resin and a photoinitiator. In Example 2 (see [0045]), the Examiner states that Otani uses phenylbis (2,4,6-trimethylbenzoyl)phosphine oxide (Irgacure 819) as the photoinitiator. Therefore, the

Examiner asserts that Otani teaches the present invention of Claim 9 (the present application includes polyesters as one of the examples for the present sacrificial polymer).

However, the present invention, as recited in claim 9, is directed to a polymer composition comprising a photodefinable polymer that includes a sacrificial polymer and a photoinitiator (emphasis added). As discussed below in detail, the Otani patent does not disclose such a sacrificial polymer nor teaches that the photocurable resin composition, disclosed therein, is in any way sacrificial or inclusive of a sacrificial material. Further, the Otani patent DOES NOT even suggest Applicant's claimed sacrificial polymer or that the aforementioned photocurable resin composition is in any way sacrificial or inclusive of a sacrificial material. Therefore, Applicant respectfully asserts that the Otani patent does NOT meet the requirement stated in MPEP §2131, and thus CAN NOT be the basis of a rejection of instant Claim 9.

It should be further noted that the Otani patent is directed to a method for producing a cast and cured product comprising a photocurable resin composition that includes: "(A) 100 pts.wt. unsaturated polyester resin and/or vinyl ester resin, (B) 0-300 pts.wt filler in a powder shape, and (C) 0.1-10 pts.wt. photopolymerization initiator..." (See Abstract). Thus in addition to not disclosing or even suggesting a polymer composition that includes a sacrificial polymer, the Otani patent suggests the inclusion of a filler into such resin which is a clear and unambiguous suggestion that the resin composition of the Otani patent is NOT all or in part a sacrificial material.

Furthermore, in Example 2 of the Otani patent, specifically referenced by the Examiner, it is stated that: "Moreover, as a result of measuring Tg by the DMA method, prepared with the casting plate by peroxide hardening of the example of a comparison, the numeric value high about 10° C was shown, and it was checked that thermal resistance is also improving." (See the last sentence of paragraph [0045] of page 14 of the translation of the Otani patent). Thus, the Otani patent teaches that adding a photoinitiator lowers the requirements on the curing conditions thereby improving the thermal resistance of the cured resin. In contrast, the present invention teaches that the decomposition or destruction of the polymer (i.e., transformed from solid to gas) can be photoinitiated. In other words, the unexposed portions decompose by heating (See claim 17). The photoinitiator of the Otani patent increases the thermal resistance of the polymer composition to make it more stable, whereas the photoinitiator of the present invention makes the sacrificial polymer less stable for decomposition. Increasing the thermal resistance of the photocurable resin composition

of the Otani patent, for this reason alone, suggests that such resin is NOT a sacrificial material.

In addition, the Otani patent discloses a method of cross-linking or curing of a permanent dielectric material “by carrying out photo-curing of the unsaturated polyester resin and/or vinyl-ester-resin constituents with which a casting hardening material with high toughness is obtained.” (See paragraph [0001] of page 1 of the translation of the Otani patent). As can be seen, the role of the photoinitiator of the Otani patent is to catalyze or induce a cross-linking reaction which results in the stabilization of the polymer making the liquid or gel of the unreacted polymer into a permanently hard and structurally rigid material as evidenced by the high toughness. In other words, the reaction of the Otani patent results in bond-forming (i.e., cross-linking) in contrast to the reaction of the present invention which results in bond-breaking and fragmentation of the polymer. In view of the above, the unsaturated polyester resin and/or vinyl ester resin of the Otani patent CANNOT teach or even suggest the sacrificial polymer as taught and claimed by the present invention.

Therefore, Applicant respectfully asserts that for at least the reasons stated above, the Otani patent teaches away from the use of a sacrificial material and, hence, there can not be any such teaching read into that patent. Thus, as the Otani patent has been shown NOT to disclose, or even suggest instant Claim 9’s limitation of a sacrificial polymer, the Otani patent CANNOT anticipate such claim and must be withdrawn. Such action is earnestly sought.

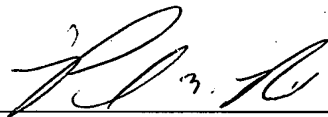
- Application No. 10/686,697  
Response to Office Action dated November 28, 2006  
Paper dated April 25, 2007  
Attorney Docket No. 5219-061243

### **CONCLUSION**

In view of the foregoing amendments and remarks, it is respectfully submitted that all of the pending claims in the present application are in condition for allowance as currently presented. Accordingly, withdrawal of the pending rejections and an early Notice of Allowance are respectfully requested.

Respectfully submitted,

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